# CpSc 130, Spring, 2016
# Introduction to Computing and Programming
# Syllabus
# Dr. Conlon

**Catalog Description:** An introductory course devoted to programming and to a description of hardware and software concepts. Programming concepts covered include top-down program development using pseudocode, algebraic notation, standard control structures, and arrays, in an appropriate programming language. Other topics include binary representation, storage, and general architecture and functioning of a computer system. Prerequisite: Beginning Algebra, ACSD 110 (or HS Algebra 1 proficiency) (3 credits)

**Professor's Description:** In this course you will create dynamic Worldwide Web pages using the JavaScript programming language, and learn information systems principles. This course is required of Computing and Information Systems majors and minors, and is a Liberal Studies *enrichment* course in the Science, Mathematics, and Technology block.

**Class Meeting:**

| Section | Time | Place |
|---|---|---|
| 1 | TR 9:30 a.m.-10:45 a.m. | ATSH 230 |
| 2 | TR 2:00 p.m.-3:15 p.m. | ATSH 130 |

**Instructor:**

| Name | Phone | Email | Office |
|---|---|---|---|
| Michael P. Conlon, Ph.D. | 724-738-2143 | michael.conlon@sru.edu | ATSH 252 |

**Office hours:** As indicated below, or by appointment.

| Day | Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|---|
| **Time** | 2 p.m.-4 p.m. | 11 a.m.-12 m. | 9 a.m.-10 a.m. | 11 a.m.-12 m. | |

Office hours are for *you*. Please feel free to visit me to discuss any problems. Do not wait until problems become unmanageable. If I am doing other work during my office hours, it is because no student has come to see me. I will gladly drop what I am doing to help you. If my office hours are inconvenient, see me before or after class and we will find a better time to meet.

**Text:** *Beginning*J*avaScript*, 5th edition, © 2015, by Jeremy McPeak and Paul Wilton, Wrox. ISBN #978-1-118-90333-9.

**Grading:**

| Exams | Projects | Lab, homework, service, etc. |
|---|---|---|
| 35% | 35% | 30% |

**Exam dates:**

| Section | Exam 1 | Exam 2 | Final |
|---|---|---|---|
| 1 | Feb 18 | Apr 14 | Thu, May 5, 8:00 a.m.-10:00 a.m. |
| 2 | | | Thu, May 5, 10:30 a.m.-12:30 p.m. |

**Software:** *Firefox* web browser (www.mozilla.org) and *Bluefish* HTML/CSS/JavaScript editor (sourceforge.net/projects/bluefish)

**Late Assignment Policy:** Late assignments will not be accepted, and will receive a grade of zero. Exceptions will be made only in extraordinary circumstances.

**Attendance, reading, and participation:** You are expected to attend every class and to arrive on time. Do not expect to be admitted to class if you are late. Please do all assigned reading *before* the class in which it is covered. You are expected to attend and participate in class, and you must do the reading and homework to participate.

**Exams:**

Exams will cover both text and lecture material; you are responsible for all assigned reading material. Some text material may not be covered in class. Much lecture material is not covered in the textbook.

If you must be absent for an examination, please see me one week in advance to make alternate arrangements to take the exam.

Please take care of bodily needs before coming to an exam: you will not be permitted to leave the room during an exam until your paper is handed in.

All electronic communication, computation, and entertainment devices must be turned off and put away during exams. Use of such devices during an exam will be considered cheating.

**Labs:** Labs will be graded mostly on completion, i.e, *acceptable* (100) or *unacceptable* (0). Your first responsibility in lab is to complete the lab assignment. When that is complete, you may work on CpSc 130 project work or homework. If you have no outstanding homework or project, make and test modifications to programs you have completed, or work on a JavaScript programming project of your choice. Your lab grade will be reduced if you are not working on course-related work during lab time. If you do not complete your lab assignment during lab time, you must demonstrate it to the instructor within two classes or it will be marked as *unacceptable* (0).

**Service, etc.:** You will be expected to complete four service/professional-development activities during the semester. For an activity to be eligible, it must be an organized activity and it must meet one of the following criteria:

- It helps you prepare for the world of work you will enter after graduation.
- You help others to use computers.
- You learn more about computing, jobs in computing, or computing in industry.

Such activities may take the form of lectures on or off campus, resumé workshops, dress-for-success workshops, Computer Technology Club meetings, and service activities for the community. If you are not sure whether an activity will count, ask me! Day-long activities count double.

In general, I do not produce these activities. You are expected to watch the bulletin boards around campus to find activities that qualify. There will be plenty of them available, but if you wait until the end of the semester to start looking, you will not be able to complete this assignment.

**Plagiarism policy:** Plagiarism or collusion will earn you a failing grade for the project, and you may be reported to the committee on academic integrity. You are not to cooperate with others *in any way* in the development of your programming projects, except as specified in

the assignment. Cooperation in doing homework and lab work is encouraged. If you have cooperated with anyone in your homework projects, you must indicate that person's name in your header comments or it will be counted as plagiarism. Verbatim use of code found on the Internet is plagiarism.

**Email:** I may communicate via electronic mail, using your SRU address. Assignments may be announced or amended this way. Be sure your email account is properly set up. You are responsible for checking your SRU email regularly.

**Recording of Lectures:** Video and/or audio recording of lectures is prohibited unless the instructor or the Office for Students with Disabilities has granted you this accommodation. The instructor reserves the right to reduce your grade should you make illicit recordings.

**High Impact Practices:** This course will make use of the following practices that have been correlated with student success:

- Intensive writing
- Collaborative assignments
- Service learning

**Copyright Permission:** By registering in this course you grant the SRU Computer Science Department permission to copy any of your coursework for use in assessment or accreditation processes, provided that information that identifies you is removed from such copies.

The following statement is required of SRU faculty in order to comply with the TEACH Act, which modifies U.S. copyright law primarily to deal with the copyright implications of online education. The link to references is mine.

**Copyright Statement:** Students shall adhere to the laws governing the use of copyrighted materials. They must ensure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others. Additional information regarding copyright and fair use can be found at www.teachingcopyright.org/handout/copyright-faq.

**Course Outcomes:** This course and its outcomes support the Computing major's Learning Outcomes of **Problem Solving and Critical Thinking** (PS&CT) and **Ethical and Professional Responsibilities** (E&PR). These Information Technology Learning Outcomes are tied directly to the University Wide Outcomes of *Critical Thinking and Problem Solving*, *Communication*, and *Values and Ethics*.

Program Objectives Assessed in CpSc 130:

| ***Program Objective*** | ***Course Objective*** |
|---|---|
| PS & CT b. Integrate design and implementation principles to develop effective applications. | 1. Write structured Web pages that utilize sequential, conditional, and iterative programming constructs. |
| PS & CT e. Create efficient, user-friendly applications appropriate to the computing problems. | |
| C & IS a. Document all aspects of a system precisely and clearly. | 2. Make Web pages that are understandable and appropriately documented. |
| E & PR a. Determine the economic and organizational effects of information technology on global society. | 3. Recognize the ethical, legal, and social implications of information processing. |

Additional Course Objectives include:
The student will be able to:

1. Define and identify terms related to computer systems, telecommunications, and networking.
2. Manipulate and configure system resources.

**Calendar (tentative), with assigned readings:**

| Date | | Topic | Reading |
|---|---|---|---|
| Jan | 19 | Introduction: Web browsing, JavaScript, Web authoring | *copyright-faq* (above) |
| | 21 | How computers work | |
| | | | |
| | 26 | Operating systems, applications, and data, GUI and CLI | |
| | 28 | Networks and the Web:The Internet | |
| | | | |
| Feb | 2 | Addresses: MAC& IP; Domain names and URL's | |
| | 4 | Intro to HTML: Bits, bytes, characters. ASCII and Unicode. Storage. Markup languages. | |
| | | | |
| | 9 | HTML. Web page creation. Tags and attributes. | |
| | 11 | Head and body. <p>&<br>, links: absolute & relative addresses, tables | |
| | | | |
| | 16 | Intro to JavaScript | Ch. 1 |
| | 18 | Exam 1 | |
| | | | |
| | 23 | Data: objects, text, number, Boolean | Ch. 2 |
| | 25 | Decisions and loops | Ch. 3 |
| | | | |
| Mar | 1 | Debugging | |
| | 3 | Functions and scope | Ch. 4 |
| | | | |
| | 15 | Objects | Ch. 5 |
| | 17 | Strings and regular expressions | Ch. 6 |
| | | | |
| | 22 | Timers | Ch. 7 |
| | 24 | DOM Scripting | *window* and *document* objects in Ch. 8; Ch. 9 |
| | | | |
| | 29 | Events | Ch. 10 |
| | 31 | | |
| | | | |
| Apr | 5 | Forms | Ch. 11 |
| | 7 | | |
| | | | |
| | 12 | Software types; files, drives, and storage | |
| | 14 | Exam 2 | |
| | | | |
| | 19 | Images: pixels, spatial frequency & dpi. Bits per pixel. RGB, CMYK, greyscale.File formats and compression: redundancy, palettes, color lookup tables, hex | |
| | 21 | <img>, resizing vs resampling: thumbnails. Images and copyright. | |
| | | | |
| | 26 | Legal issues & the Web. Intellectual property: 3 kinds. Copyright | |
| | 28 | Originality and fixed expression. Case law. Citation and academic honesty. | |
| | | | |
| May | 5 | Final Exam | |